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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/849,080

05/04/2001

Adalbert Bandemer

03591-P0001A

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06/17/2004

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EXAMINER

ROJAS, OMAR R

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/849,080

Applicant(s)

BANDEMER, ADALBERT

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 4 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0402+.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The prior art documents submitted by applicant in the Information Disclosure Statement(s) filed on April 9, 2002; August 19, 2002; and September 24, 2002 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Polarization Mode Dispersion Emulator".

Claim Objections

4. Claims 1-2 are objected to because of the following informalities: The term "axles" in claims 1-2 is used by the claims to mean "axes", while the accepted, contemporary meaning is "a pin or shaft on or with which a wheel or pair of wheels revolves." The term is indefinite because the specification does not clearly redefine the term. Appropriate correction is required.
5. Claim 1 is objected to because of the following informalities: Claim 1 is vague because it does not clearly specify that the "device" in which the light signal is fed, consists of the same second initial polarization splitter/combiner element, the same delaying unit, and the same initial polarization splitter/combiner element as also

mentioned in claim 1. Applicant(s) have disclosed that one of the primary advantages of the claimed invention is that "it is not even necessary to use additional components, which would increase the costs." See page 3 of the specification, last paragraph.

Appropriate correction is required.

6. Claims 4 and 7 are objected to because of the following informalities: Claim 4 recites the limitation "the non-utilized input connector" and "the signal" without providing a clear, unambiguous antecedent basis for these limitations in the claim(s). Claim 7 recites the limitation "fibers as delaying path" without providing a clear, unambiguous antecedent basis for this limitation in the claim(s). Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 5, 6, and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,430,454 to Refregier et al. (hereinafter "Refregier"), provided by applicant.

To the extent claims 1-3, 5, 6, and 9-12 are definite, Refregier discloses a device (see Figs. 12-13) comprising:
an initial polarization splitter/combiner element (SP11), which divides the incoming signal into two signals vertical polarization alignment to one another, a

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delaying unit, (R11 and/or R12) which is installed in one of the signal paths of the two signals, a second polarization splitter/combiner element (SP12) which reunites the two separated signals, distinguished in that, for the production of a second-order polarization mode dispersion, an element (P2) is provided which twists the polarization main axes ahead of and behind the element toward one another by an appropriate angle, and that the light signal emitted from this element is fed into a device, which likewise consists of a polarization splitter/combiner element (SP21), a delaying path (R21 and/or P22), and an additional polarization splitter/combiner element (S22) for bringing the two signal paths back together.

With regards to claims 2-3, Refregier discloses that centralized control of the polarizing elements (P1 and P2) is necessary and such control (i.e., achieving a desired rotation angle) would depend on the polarity of each beam. See column 9, lines 13-19.

With regards to claims 5, 6, and 9-12, to the extent the claims are definite, Refregier also discloses the claimed limitations. See, especially, column 8, line 46-column 9, line 12.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Refregier as applied to claim 5 above, and further in view of EP 0 376 449 to British Telecomm (hereinafter "BT"), provided by applicant.

To the extent claim 7 is definite, Refregier only differs in that Refregier does not teach using optical fibers exposed to mechanical stress as providing the delaying path.

BT, on the other hand, discloses an optical fiber (see Fig. 3) that is exposed to mechanical stress by piezo-electric stretcher (27) and thus induces a phase delay in the optical fiber.

The ordinary skilled artisan would have sought to use an optical fiber exposed to mechanical stress by a piezo-electric stretcher because the phase delay is linearly related to the applied voltage ramp (i.e., it is easily adjusted).

Therefore, it would have been obvious to one of ordinary skill in the art to obtain the invention specified by claim 7.

Allowable Subject Matter

11. Claims 4 and 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 4, there is no suggestion in Refregier, nor does it appear that it would have been obvious, to use the non-utilized input connector of the second polarization splitter/combiner element as an input connector for the light signal emitted from the element. Regarding claim 8, Refregier appears to teach away from using spliced optical fibers as the means for adjusting the polarization angle. See, for example, Refregier at column 6, lines 57-68 and column 8, lines 46-51.

Conclusion

13. US 2002/0075477 to Yu et al. discloses a similar method for compensation of second order polarization dispersion effects but was filed after the claimed priority date.

14. Since all the references used in the above rejection were submitted by applicant in the prior art statement, no copies thereof are provided with this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357 and whose e-mail address is *omar.rojas@uspto.gov*. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hemang Sanghavi, can be reached on (571) 272-2358. The official

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facsimile number for regular and After Final communications is (703) 872-9306. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas
Patent Examiner
Art Unit 2874

or
June 10, 2004



HEMANG SANGHAVI
PRIMARY EXAMINER